

Case 2868

***Hydromantes* Gistel, 1848 (Amphibia, Caudata): proposed designation of *Salamandra genei* Temminck & Schlegel, 1838 as the type species**

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Abstract. The purpose of this application is to conserve the usage of the name *Hydromantes* Gistel, 1848 for a group of five species of salamanders (family PLETHODONTIDAE Gray, 1850) from the mountain areas of north-central and western Italy and southern France; Sardinia; and the mountains of northern and central California, U.S.A. *Hydromantes* is a replacement name which, with one exception (in 1984), has consistently been used during the past 70 years. It is proposed that *Salamandra genei* Temminck & Schlegel, 1838 be designated the type species, in accordance with understanding and usage.

1. Gistel (1848, p. xi) proposed the replacement name *Hydromantes* for *Geotriton*. He did not cite either the authorship or date of the latter name, noting only 'Unter den Lurchen, besonders den Batrachiern, ist zu ändern ... *Geotriton* in *Hydromantes* ...'. The name *Hydromantes* has been used by many authors during the past 70 years and has been attributed consistently to Gistel (see paras. 5 and 7 below).

2. The first publication of the name *Geotriton* was by Bonaparte in 1831 (p. 151), included in the family SALAMANDRIDAE Gray, 1825; since there was neither a description nor included species the name was a nomen nudum. The name was made available by Bonaparte ([1832], pp. [243]–[244], pl. [83]), who adopted it for a subgenus of *Triton* Laurenti, 1768 (the latter was subsequently replaced, as a junior homonym, by *Triturus* Rafinesque, 1815). Bonaparte included in *Geotriton* the single nominal species *Salamandra exigua* Laurenti, 1768 (p. 41, pl. 3, fig. 4), which is thus the type species by monotypy. Subsequently, without referring to his [1832] publication, Bonaparte ([1837], pp. [255]–[256], pl. [84] used the name *Geotriton* for '*Geotriton fuscus*', a misidentification of *Salamandra fusca* Laurenti, 1768 (p. 42; a subjective synonym of *S. atra* Laurenti, 1768, p. 42, pl. 1, fig. 2; see, for example, Mertens & Wermuth, 1960, pp. 19, 35 and paras. 4–6 below). The dates of publication ([1832]–[1841]) of the parts of Bonaparte's work were set out by Salvadori (1888). Tschudi (1838, pp. 59, 93, 94, pl. 2, fig. 3) adopted the name *Geotriton* and attributed it to Bonaparte. Tschudi did not cite a date for the name but his text makes it clear that Bonaparte ([1837]) was the source. Tschudi's publication was included in the *Mémoires de la Société des Sciences Naturelles de Neuchâtel* in 1840 but was issued as a separate in 1838; Mertens (1967, p. v) accepted Stejneger's

(1907, p. 6) date of October 1838 for the first appearance of the work. The single species *Geotriton genei* included in the genus by Tschudi was also attributed to Bonaparte. This appears to have been a manuscript name of Bonaparte's which was made available, as *Salamandra genei*, by Temminck & Schlegel (1838, p. 115). Temminck & Schlegel's work has been dated either as January 1838 (Sherborn & Jentink, 1985, p. 150), or as '1838 ... between May and October, probably ... September' (Stejneger, 1907, p. 543), or as 'after May 1838' (Hoogmoed, 1978, p. 92). The genus *Geotriton* was diagnosed by Bonaparte ([1839], p. [263]) among the 'generi Salamandrini'; he again referred to '*G. fuscus*' and noted that he used *Geotriton* in the restricted sense adopted by Tschudi.

3. Schlegel (1844, p. 122, pl. 39, figs. 5–7) subsequently described and illustrated *Salamandra genei* Temminck & Schlegel, 1838. Schlegel, Gray (1850, p. 47) and Duméril & Bibron (1854, p. 112) recorded *genei* as a synonym of '*G. fuscus*'. Bonaparte but the two taxa have otherwise been consistently considered as distinct. Gray (1850) placed '*G. fuscus*' in his new family PLETHODONTIDAE.

4. The name *Hydromantes* Gistel, 1848 remained unused until Dunn (1923, p. 40) resurrected it in place of *Geotriton* as used by Bonaparte ([1837]) and Tschudi (1838). Dunn treated *Geotriton* Bonaparte, [1837] as a junior homonym of *Geotriton* Bonaparte, [1832]. He included two European and one American species in the genus: *Hydromantes italicus* Dunn, 1923 (a new name for '*Geotriton fuscus*' as misidentified by Bonaparte ([1837]); see para. 2 above), *Salamandra genei* Temminck & Schlegel, 1838, and *Spelerpes platycephalus* Camp, 1916 (p. 11). Dunn supposed that the name *Hydromantes*, as proposed by Gistel, had been a replacement for '*Geotriton* Tschudi'; he therefore designated *S. genei* as the type species of *Hydromantes*. However, as a replacement for *Geotriton* Bonaparte '1837 not 1832', as cited by Dunn, *G. fuscus* would be the type species (see Gorman, 1964a, p. 1), although this was a misidentification by Bonaparte. Subsequently, Dunn (1926, pp. 344–354) described the genus *Hydromantes* and the three included species, and again cited *genei* as the type. Hoogmoed (1978, pp. 102, 103) recorded that the seven specimens from Sardinia on which the description of *S. genei* was based were in the Nationaal Natuurhistorisch Museum, Leiden and designated an adult male, no. RMNH 2296A, as the lectotype. Hoogmoed commented that this specimen may have been that illustrated by Schlegel (1844, pl. 39, figs. 5–7; see para. 3 above).

5. The name *Hydromantes* Gistel has been universally adopted in the sense of Dunn (1923) and during the last 70 years has been used in both Europe and North America in hundreds of works by dozens of authors. It has appeared in major reference and popular publications as well as in publications on taxonomy. Lanza & Vanni (1981) noted some of the European literature, and Gorman (1964a, 1964b) summarized mostly the American literature up to that time. The evolutionary relationships and biogeography of *Hydromantes* have been discussed by many authors (see, for example, Wake, Maxson & Wurst, 1978, and references in that work). Three American species are currently recognized; they all have protected status under national and state laws and the name *Hydromantes* is therefore cited in governmental regulations. Lanza & Vanni (1981, p. 119) proposed the name *Hydromantoides* (type species *Spelerpes platycephalus* Camp, 1916) for the North American group of species, retaining *Hydromantes* for the European taxa. However, since 1981, with the exception of Dubois (1984; see para. 6 below), *Hydromantes* has

continued to be used for both the North American and European species (see, for example, Frost, 1985, pp. 590, 591; Stebbins, 1985, p. 60; Duellman & Trueb, 1986, p. 508; Collins, 1990, p. 7).

6. Dubois (1984, p. 106) noted that an examination of the parts ([1832], [1837]) of Bonaparte's work showed that in both the author had applied the name *Geotriton* to the same biological species, which was subsequently named *Hydromantes italicus* by Dunn (1923). In the earlier publication ([1832]) Bonaparte thought that the species was that called *Salamandra exigua* by Laurenti (1768), whilst in the later publication ([1837]) Bonaparte considered it to be *S. fusca* Laurenti, 1768. Both were misidentifications. Dubois commented that Bonaparte had therefore introduced only one new generic name, *Geotriton* Bonaparte, [1832], which he had applied successively to two distinct nominal species: 'Le nom générique *Geotriton* qui apparaît dans la combinaison *Geotriton fuscus* dans le travail de Bonaparte (1837) n'est autre que *Geotriton* Bonaparte, 1832'. Dubois noted that *Geotriton* (type species *S. exigua*), and the replacement name *Hydromantes* Gistel, 1848, were junior subjective synonyms of *Triturus* Rafinesque, 1815 (consistently included in the family SALAMANDRIDAE), and that therefore the name *Hydromantes* could not be used for the genus which includes the species *genei* and *italicus*. Dubois commented that it would be possible to submit an application to the Commission to conserve *Hydromantes* by setting aside *S. exigua* as the type species and designating either *genei* or *italicus* as the type. However, he considered that recourse to such action was unjustified. Dubois (1984, pp. 107–109) adopted the name *Hydromantoides* Lanza & Vanni, 1981 in place of *Hydromantes*, included all the American species in the nominotypical subgenus, and introduced the new subgenus *Speleomantes* Dubois, 1984 (type species *Hydromantes italicus* Dunn, 1923) for the European group of species (including *Salamandra genei* Temminck & Schlegel, 1838).

7. Subsequent authors have not adopted Dubois's (1984) nomenclature. Its adoption would cause considerable and unnecessary confusion. As noted in para. 5 above, for the last 70 years authors have used the name *Hydromantes* for a group of species included in the family PLETHODONTIDAE. With few exceptions (e.g. Lanza & Vanni, 1981), both the American and European species have been included (and even Lanza & Vanni's work retained *Hydromantes* for the European species). Dunn (1923, 1926) and subsequent authors have universally credited Gistel (1848) with authorship. With the exception of Gorman (1964a), authors have followed Dunn and recognized *Salamandra genei* Temminck & Schlegel, 1838 as the type species and it is proposed that this be designated the type in accordance with usage.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous fixations of type species for the nominal genus *Hydromantes* Gistel, 1848 and to designate *Salamandra genei* Temminck & Schlegel, 1838 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Hydromantes* Gistel, 1848 (gender: masculine), type species by designation in (1) above *Salamandra genei* Temminck & Schlegel, 1838;
- (3) to place on the Official List of Specific Names in Zoology the name *genei* Temminck & Schlegel, 1838, as published in the binomen *Salamandra genei* (specific name of the type species of *Hydromantes* Gistel, 1848).

References

- Bonaparte, C.L.J.L. 1831. Saggio d'una distribuzione metodica degli Animali Vertebrati a sangue freddo. *Giornale Arcadico di Scienze Lettere ed Arti*, 52: 129-209.
- Bonaparte, C.L.J.L. [1832], [1837], [1839]. *Iconografia della fauna Italica per le quattro classi degli animali vertebrati*, vol. 2 (Amfibi), fasc. 1 ([1832]), fasc. 19 ([1837]), fasc. 26 ([1839]). Salviucci, Roma.
- Camp, C.L. 1916. *Spelerpes platycephalus*, a new alpine salamander from the Yosemite National Park, California. *University of California Publications in Zoology*, 17(3): 11-14.
- Collins, J.T. 1990. *Standard common and current scientific names for North American amphibians and reptiles*, Ed. 3. iii, 41 pp. Herpetological Circular, no. 19. Society for the Study of Amphibians and Reptiles, U.S.A.
- Dubois, A. 1984. Miscellanea nomenclatorica batrachologica (IV). *Alytes*, 3(3): 103-110.
- Duellman, W.E. & Trueb, L. 1986. *Biology of amphibians*. xvii, 670 pp. McGraw-Hill, New York.
- Duméril, A.-M.-C. & Bibron, G. 1854. *Erpétologie générale ou histoire naturelle complète des reptiles*, vol. 9. xx, 440 pp. Librairie Encyclopédique de Roret, Paris.
- Dunn, E.R. 1923. Mutanda herpetologica. *Proceedings of the New England Zoological Club*, 8: 39-40.
- Dunn, E.R. 1926. *The salamanders of the family Plethodontidae*. viii, 441 pp. Smith College, Northampton, Massachusetts.
- Frost, D.R. (Ed.). 1985. *Amphibian species of the world*. v, 732 pp. Allen Press & Association of Systematics Collections, Lawrence, Kansas.
- Gistel, J. 1848. *Naturgeschichte des Thierreiches für höhere Schulen*. xv, 216, [4] pp., 32 pls. Hoffman, Stuttgart.
- Gorman, J. 1964a. *Hydromantes*. *Catalogue of American Amphibians and Reptiles*, 10: 1-2.
- Gorman, J. 1964b. *Hydromantes brunus*, *H. platycephalus*, and *H. shastae*. *Catalogue of American Amphibians and Reptiles*, 11: 1-2.
- Gray, J.E. 1825. A synopsis of the genera of reptiles and amphibia, with a description of some new species. *Annals of Philosophy*, (n.s.)10(3): 193-217.
- Gray, J.E. 1850. *Catalogue of the specimens of Amphibia in the collection of the British Museum*, part 2 (Batrachia Gradientia). 72 pp. British Museum, London.
- Hoogmoed, M.S. 1978. An annotated review of the salamander types described in the 'Fauna Japonica'. *Zoologische Mededelingen*, 53(9): 91-105.
- Lanza, B. & Vanni, S. 1981. On the biogeography of plethodontid salamanders (Amphibia Caudata) with a description of a new genus. *Monitore Zoologico Italiano*, (n.s.)15: 117-121.
- Laurenti, J.N. 1768. *Austriaci Viennensis specimen medicum, exhibens synopsis reptilium emendatum cum experimentis circa venena et antidota reptilium austriacorum*. ii, 215 pp. de Trattner, Vienna.
- Mertens, R. 1967. *Tschudi's 'Classification der Batrachier'*. Fascimile reprint, with an introduction by Robert Mertens. Fascimile Reprints, no. 17. vi, 100 pp., 6 pls. Society for the Study of Amphibians and Reptiles, U.S.A.
- Mertens, R. & Wermuth, H. 1960. *Die Amphibien und Reptilien Europas*. xi, 264 pp. Kramer, Frankfurt am Main.
- Salvadori, T. 1888. Le date della pubblicazione della 'Iconografia della Fauna Italica' del Bonaparte ed Indice delle specie illustrate in detta opera. *Bollettino dei Musei di Zoologia ed Anatomia Comparata della R. Università di Torino*, 3(48): 1-25.
- Schlegel, H. 1844. *Abbildungen neuer oder unvollständig bekannter Amphibien ...*, part 3. Pp. 81-141 (text), pls. 21-50 (atlas). Düsseldorf.
- Sherborn, C.D. & Jentink, F.A. 1895. On the dates of the parts of Siebold's 'Fauna Japonica' and Giebel's 'Allgemeine Zoologie' (first edition). *Proceedings of the Zoological Society of London*, 1895: 149-150.
- Stebbins, R.C. 1985. *A field guide to western reptiles and amphibians*. xvi, 336 pp. Houghton Mifflin, Boston.
- Stejneger, L. 1907. Herpetology of Japan and adjacent territory. *Bulletin of the United States National Museum*, 58: 1-577.

- Temminck, C.J. & Schlegel, H.** [1838]. Les batraciens. Pp. 105–140, 8 pls. in Siebold, P.F. de, *Fauna Japonica, sive descriptio animalium, quae in itinere per Japoniam ... annis 1823–1830 collegit. Reptilia Elaborantibus. Lugduni-Batavorum*.
- Tschudi, J.J.** 1838. Classification der Batrachier, mit Berücksichtigung der fossilen Thiere dieser Abtheilung der Reptilien. *Mémoires de la Société des Sciences Naturelles de Neuchâtel*, 2: 1–102. (Issued in the serial in 1840 but published as a separate in 1838).
- Wake, D.B., Maxson, L.R. & Wurst, G.Z.** 1978. Genetic differentiation, albumin evolution, and their geographic implications in plethodontid salamanders of California and southern Europe. *Evolution*, 32(3): 529–539.